

FIVE NEW COCCIDÆ.

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Ripersia arizonensis, n. sp.

♀ enclosed in a broadly oval snow-white waxy sac, about 3 mm. long, 2 mm. wide, $1\frac{1}{2}$ mm. high, sac widest between middle and caudal end.

♀ oval, about one-third longer than broad, shiny, light purplish-brown, about 3 mm. long. When boiled in K. H. O. turns reddish-brown. Derm colourless, with numerous bristles scattered over the dorsum. Antennæ 6-jointed: 6 longest, joint 4 shortest; formula, 6, 1, 2, 3, 5, 4. Each joint with several hairs, joint 6 quite bristly. Legs light brown, quite stout. Femur longer than tibia. Tibia very little longer than tarsus. Tarsal digitules long fine hairs. Claw slender and curved, digitules of claw very short and slender. Anal lobes prominent, with very long bristle at tip, and several stout ones on its margins. Anal ring large, with 6 bristles. *Hab.*—In ants' nest on the roots of *grass* and *Artemisia*, sp., Camp Thurber, Grand Canyon of the Colorado, Arizona.

[This peculiar insect may form the type of a new sub-genus, *Cryptoripersia*, Ckll., which will be distinguished by the possession of a complete subpyriform brittle sac. The following measurements in $\mu\mu$ will assist in the recognition of *Ripersia arizonensis*: Anterior leg: femur, 116; tibia, 83; tarsus, 6c. Antennal segments: (1) 41, (2) 33, (3) 33, (4) 25, (5) 33, (6) 61.—T. D. A. CKLL.]

Kermes ceriferus, n. sp.

♀ scale globular, about 4 to $4\frac{1}{2}$ mm. in diameter, ground colour brown, shiny, dotted with black spots. Scale completely covered with dirty white wax. Segmentation obsolete, only indicated by black markings. Ventral slightly pubescent. After boiling in K. H. O., derm colourless, with numerous small round glands and brown spots. Antennæ very small, joints obscure, last joint with numerous hairs. Legs quite stout, claw curved.

Larva about twice as long as broad, reddish, turning yellow when dead. Eyes red. Antennæ 6-jointed: joints 3 and 6 about equal, joints 1 and 2 equal, and 4 and 5 equal. Formula (63)(12)(45). Rostral loop reaching half way between last pair of legs and tubercles. Legs large and stout. Tarsus twice as long as tibia. Claw long and curved. Margin of each segment with stout curved spine. Caudal tubercles very large, each bearing one very long bristle and three stout spines.

Hab.—On *Quercus*, sp. Walnut Creek Canyon, near Flagstaff, Ariz.
Ripersia villosa, n. sp.

♀ in clusters and single in the crotches of twigs of oak. Sac loosely woven of long white wool, oval, about 2 mm. long and 1 mm. broad.

♀ when removed from sac bright crimson, slightly covered with white powder, skin shiny; about 1.5 mm. long, 1 mm. broad, tapering anteriorly and quite convex dorsally. When boiled in K. H. O., derm colourless, densely covered with slender hairs. Antennæ light brown; 7-jointed. Joint 7 longest. Sometimes joint 1 is next longest, but joint 2 is often longer than 1, and in many cases they are subequal; joint 6 usually next, although joint 3 may be longer than 6; joint 4 next, often subequal with 5; sometimes 3 shortest, sometimes 5; 3 and 5 often subequal. In fact, the sequence of the joints is quite variable, as is shown in the following antennal formulæ:

$$\begin{array}{l} 721(36)(45) \\ 7(12)6(45)3 \\ 71264(53) \\ 7(12)64(53) \end{array}$$

Joint 1 is stouter than any of the others. Each joint with hairs, joint 7 with several stout hairs. Legs light brown, large and stout; each joint furnished with one or more rather long bristles. Femur, 80 × 50 μ. Tibia, 70 μ. Tarsus, 50 μ. Claw, 20 μ. Digitules of claw knobbed, moderately short and stout. Tarsal digitules long, fine, slightly knobbed hairs. Tubercles small and rounded, with long stout bristle. Anal ring with six stout hairs.

Larva when newly hatched, colour light red, rostral loop extending beyond body.

Hab.—On *Quercus agrifolia*, at Berkeley, California.

[This species is probably most nearly allied to *Dactylopius Quaintancii*, Tins., from which it differs in being more distinctly a *Ripersia* in the general appearance of both the antennæ and legs.—J. D. TINSLEY.]

Dactylopius formicarii, n. sp.

♀ small, broadly oval, slightly covered with powder, about 2 mm. long and 1 mm. broad. Colour yellowish-brown; when boiled in soda, turns red. Epidemis of dorsum with scattered spinnerets and hairs on thorax; on abdomen these become more numerous posteriorly, especially the hairs, which are quite numerous on the last 4 segments. Ventrally the long slender hairs are quite numerous on all the segments, but especially so on

the last abdominal segments. Sides with rows of spinneret spine areas. Antennæ 8-jointed in some, 7-jointed in others, nearly concolorous with the body. Joint 8 longest; next is 2, joint 1 usually next, although 3 may be longer; 5 next, always appreciably longer than 7; 6 may be either shorter or longer than 7; 4 always shortest.

Many of the antennæ are 7-jointed through failure of the 3rd to divide; the 3rd is always then quite long. Formulæ:

8-jointed = 82135764.

7-jointed = 7321456.

The joints of the antennæ bear very long, rather stout, hairs.

Legs stout and quite hairy. Femur shorter than tibia. Tibia, 215 μ long. Tarsus, 110 μ long. Claw rather stout, 37 μ long. Digitules of claw fine knobbed hairs reaching beyond claw. Tarsal digitules long slender hairs. Caudal lobes small, rounding, with one very long (200 μ) stout bristle and several shorter ones, also numerous round glands. Anal ring large, with 6 moderately long hairs.

Hab.—*In ants' nests* on the roots of *Artemisia*, sp. Thurber's Camp, Grand Canyon of the Colorado, Arizona.

[Antennal formula approaches that of *D. solani*, Ckll., but the great hairiness of the body and antennæ readily separate it from that species.—J. D. TINSLEY.]

Kermes Pettiti, n. sp.

♀ scale about 4 mm. broad, 3 mm. long, and 3 mm. high, dark purplish-brown; some individuals of a lighter colour and marbled with brown. A distinct longitudinal groove on the meson indicated by a dark line. Surface without minute black specks. Segmentation not very distinct, indicated by rows of black spots plainly seen through a pocket lens. Ventral surface, where it touches the bark, flattened and more or less covered with a yellow secretion. Beak very prominent. When removed from twig scale leaves a whitish powder. When boiled in K. H. O., derm colourless, except numerous brown spots with black centres scattered over the dorsum. Antennæ very obscurely 6-jointed, joint 3 apparently longest. Legs very small and stout. Tibia as broad as long, with a stout spine. Femur and tibia about equal. Tarsus nearly twice as long as tibia. Claw straight.

Hab.—On *Quercus*, sp.; Ithaca, N. Y.; sent to me by Mr. R. H. Pettit as *K. galliformis*, Riley. I take pleasure in naming this species after the collector. Specimens have been examined by Mr. Cockerell, who agrees that they represent a new species.